Alaska
Mosquito and Biting Fly Pest Control
Supplemental Information

Category Ten

In general, applicators who apply pesticides to property other than their own, or act as a pesticide consultant must obtain certification from the Alaska Department of Environmental Conservation (ADEC) Pesticide Program. Applicators who apply restricted-use pesticides, regardless of location, must also be certified.

All individuals who apply pesticides to control mosquitoes or biting flies must be certified by the ADEC in the Mosquito and Biting Fly Pest Control Category (Category Ten).

Chapter Three and Chapter Six of the Florida *Public-Health Pesticide Applicator Training Manual* contain the majority of information needed to successfully complete the written examination to obtain certification in Category Ten in Alaska. However, regulations and requirements are different in Alaska, as are environmental conditions. This supplemental manual provides additional information that is specific to Alaska.

The information needed to successfully complete the written core examination required for all certified pesticide applicators in Alaska includes:

1. National Pesticide Applicator Certification Core Manual;
2. Alaska Core Manual Supplement; and
3. State of Alaska Pesticide Regulations in Title 18, Chapter 90 of the Alaska Administrative Code (18 AAC 90)

The information needed to successfully obtain certification in Category Ten in Alaska includes:

1. This Alaska Supplemental Manual
2. Chapter Three of the Florida *Public-Health Pesticide Applicator Training Manual;* and
3. Chapter Six of the Florida *Public-Health Pesticide Applicator Training Manual*.

Learning Objectives for this manual

- Explain when and what types of permits are required from DEC for applying pesticides to water.
- Describe other mosquito control activities that might require a pesticide-use permit.
- Explain why mosquitoes do not transmit diseases in Alaska.
- Describe the disease tularemia, and list carrier insects.
- List the main four types of biting insects found in Alaska.
- List the two genus of mosquitoes found in Alaska.
- Name the family of black flies found in Alaska.

PERMIT REQUIREMENTS

ALL applications of pesticide to water bodies require a pesticide-use permit. In addition, all application of pesticides using aircraft requires a pesticide-use permit. Application to more than one private properties, such as spraying an entire town area with a truck mounted sprayer, requires a both a pesticide-use permit and specific permission from each land owner. Please refer to the Alaska Core Supplement for further information regarding permits.

APDES PERMIT REQUIREMENTS

In addition to the Alaska Pesticide-Use Permits, an Alaska Pollution Discharge Elimination System (APDES) Permit is required before a pesticide may be applied to any surface water.

The APDES permit is available through the DEC wastewater division, and must be obtained prior to applying for Pesticide Use Permit from the DEC Pesticide Control Program. For more information, contact at **james.rypkema@dec.gov**, or (907) 334-2288.

PESTICIDE LABELING

As with all pesticides, state and federal law requires compliance with all label instructions. It is particularly important to ensure that any pesticides applied to water bodies are **specifically labeled for aquatic use**.

INFECTIOUS DISEASES CARRIED BY INSECTS IN ALASKA

Outside of tropical areas, mosquitoes carry relatively few viruses. The main mosquito-borne viruses prevalent in the United States are various types of encephalitis and West Nile Virus. Due to a variety of factors such as environmental conditions and absence of specific mosquito carrier species, these viruses do not occur in Alaska.

Because few infectious diseases are transmitted through insect vectors in Alaska, mosquito and biting fly control is implemented primarily to reduce nuisance insect populations.

Tularemia is present in Alaska, although it rarely presents any human health problems. Tularemia is a bacterial disease that causes flu-like symptoms and other problems, and can be fatal if untreated. It can occur in hares and other small mammals in Alaska, and is sometimes, although rarely, transmitted to humans or pets. It can be carried by black flies, biting midges, and deer flies.

COMMON BITING INSECTS IN ALASKA

Mosquitoes

Alaska is host to approximately 35 different species of mosquito. The most common mosquitoes belong to the genus *Aedes*. Mosquitoes of the genus *Culiseta* are also present, and are often the first to emerge in spring. Additional information on mosquitoes is provided in Chapter Six of the Florida manual.

Black Flies

Alaskan black flies are in the *Simulid* family. They are also called buffalo gnats or white sox, after the white stripes on their legs. These insects crawl under clothing or near the hairline to bite the skin, and may cause an itchy, swollen bump that persists for over a week. Additional information on black flies is provided in Chapter Three of the Florida manual.

Biting Midges

Biting midges are also called no-see-ums, punkies, or sand flies. These tiny flies are small enough to go through the mesh on head nets and tent screens, and can cause a painful bite. Additional information on biting midges is provided in Chapter Three of the Florida manual.

Deer flies
Deer flies are large flies with broad heads and bulging, often brightly colored eyes. Their flight may be silent, and their bite is painful. Additional information on deer flies is provided in Chapter Three of the Florida manual.

FLORIDA *PUBLIC-HEALTH PESTICIDE APPLICATOR TRAINING MANUAL*

Portions To Disregard

You may disregard the following sections or pages of the Florida manuals, as they do not apply in Alaska:

- **Chapter Three**; references to all genus of mosquitoes except Aedes or Culiseta.
- **Chapter Three**; Pages 3-11 through 3-13, including sections on Arbovirus Surveillance in Vertebrate Hosts, Vertebrate Host Collection, Blood Collection, and Arbovirus Surveillance in Mosquitoes. These techniques are used to combat mosquito-borne viruses which do not occur in Alaska.
- **Chapter Three**; Pages 3-14 to 3-15, including information on source reduction. These techniques are not realistic in Alaska's environment.

Learning Objectives – Chapter Three

- Describe the four life stages of a mosquito.
- State how far some mosquitoes may travel from the water source where they spent their larval stage.
- Explain why identification of the species of mosquito is required to achieve adequate control.
- Describe the characteristics of environments that Culiseta mosquito larvae typically inhabit (ponds, swamps, canals or pits).
- Describe the characteristics of environments that Aedes mosquito larvae typically inhabit (rain and floodwater pools, artificial container, and tree holes.
- List the purposes of initial surveys for mosquitoes.
- List the purposes of more detailed surveys and mapping.
- Describe the basic processes for egg surveys, oviposition traps, and larval/pupal surveillance.
- Describe several methods for adult surveillance.
- Explain reasons why mosquito larvae should be targeted for pesticidal controls, rather than adults.
- Explain why different types of larvacides must be applied at different times during larval development.
- Define the term ULV application.
- Explain reasons why adulticide applications must occur between dusk and dawn.

- Explain why very fine droplet size is desired for ULV applications.

Learning Objectives – Chapter Six

- Describe the four life stages of a fly.
- Describe the identification, biology, development, behaviors, and damage of various types of flies.
- Explain why identification of the species of fly is required to achieve adequate control.
- Describe some sampling and surveillance methods for flies.
- Describe ways to improve sanitation to help reduce presence of non-biting flies.
- List methods to exclude flies from entry into a structure.
- Explain some reasons why the use of larvacide to control flies is not recommended.
- Explain why ULV applications are generally not effective to control biting flies over the long term.
- Explain why the use of space spraying in small areas and personal insect repellents are some of the most effective means of controlling biting flies.

Before Using Any Pesticide

STOP

All pesticides can be harmful to health and environment if misused.

Read the label carefully. Use only as directed.